DOCUMENT RESUME

ED 176 893 PS 010 924

AUTHOR Irvine, David J.; And Others
TITLE Parent Involvement Affects Children's Cognitive Growth.
INSTITUTION New York State Education Dept., Albany. Div. of Research.
PUB DATE 31 Aug 79
NOTE 15p.; For related document, see PS 010 919
AVAILABLE FROM Prekindergarten Evaluation Unit, State Education Department, Albany, New York 12234 (no charge)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Cognitive Development; Family Income; Knowledge Level; Parental Background; *Parent Influence; *Parent Participation; *Preschool Children; *Preschool Programs; Thought Processes; Verbal Development
IDENTIFIERS New York Experimental Prekindergarten Program

ABSTRACT

As part of a longitudinal study of the New York State Experimental Prekindergarten Program, the effect of degree of parental involvement in the program on children's cognitive development was examined. Parent involvement included employment in the program, school visits, home visits by school personnel, group meetings, and incidental contacts such as telephone calls. Degree of involvement ranged from 0 to 200 hours. Three kinds of cognitive development were examined: (1) general reasoning, measured by the Walker Readiness Test for Disadvangated Children; (2) school related knowledge and skills, measured by the Cooperative Preschool Inventory; and (3) knowledge of verbal concepts, measured by the Peabody Picture Vocabulary Test. Results showed that parent involvement had a favorable effect on all three kinds of cognitive development. The effects were found regardless of the child's age, mother's education, or family income. For general reasoning and school related knowledge and skills, the effects were also found, regardless of the child's score on the same test at the beginning of prekindergarten. For knowledge of verbal concepts, however, the effect of parent involvement tended to be greater for children who were initially lowest in knowledge of verbal concepts. (Author/SS)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED176893

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

PARENT INVOLVEMENT AFFECTS CHILDREN'S COGNITIVE GROWTH

Prekindergarten Evaluation Staff

David J. Irvine, Coordinator
David L. Flint
Thomas L. Hick
Mary D. Horan
Susan E. Kukuk
Edward Fallon

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Division of Research
Prekindergarten Evaluation Unit
Albany, New York 12234

August 31, 1979

PS010924

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
David J. Irvine
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

PARENT INVOLVEMENT AFFECTS CHILDREN'S COGNITIVE GROWTH

The extent to which parents involve themselves in their children's educational program affects the children's cognitive development, according to results of a study of the New York State Experimental Prekindergarten (PreK) Program. The children who tended to score highest on three measures of cognitive development were those whose parents spent the most time participating in activities related to the program or the school.

Parent involvement included school visits, home visits by school personnel, meetings, employment in the program, and incidental contacts such as telephone calls.

Three kinds of cognitive development were examined: (a) general reasoning, measured by the Walker Readiness Test for Disadvantaged Children (Walker, 1969); (b) school-related knowledge and skills, measured by the Cooperative Preschool Inventory (Educational Testing Service, 1970); and (c) knowledge of verbal concepts, measured by the Peabody Picture Vocabulary Test (Dunn, 1965).

The effect of parent involvement is of interest to educators. Early childhood educators have emphasized the value of parent involvement. The New York State Experimental Prekindergarten Program, for example, requires participating districts to provide means of involving parents in the program (State Education Department, undated).

Research shows a generally favorable effect of parent involvement (Rabin, 1972; Donachy, 1976; Hubbell, 1977). However, weaknesses in research design in a number of the studies on the topic produced results which are not as persuasive as might have been possible. Among the weaknesses found in the studies were the failure to assign subjects randomly to treatment and control groups, lack of control for socio-economic and personal characteristics of children, inadequate control groups, failure to investigate apparent interactions between variables, and failure to use the most powerful statistical procedures available.

The present study was designed to investigate the effects of parent involvement on children's cognitive development while overcoming some of the weaknesses of other studies. A technical report is available for individuals requesting it (Hick, et al., August 1979).

Design of the Analysis

The analysis was designed to determine whether the amount of time parents were involved in the PreK program was related to the performance of their children on each of the three measures of cognitive performance. But if such a relationship is found, is the children's performance actually influenced by their parents' involvement? Is it possible, for example, that what appears to be an effect of parent involvement could actually be the result of something else? Could it be caused by such things as differences in the educational levels of the children's mothers? It is quite possible that better educated mothers also participate more in their children's schooling. If this is so, it is also possible that

the relatively high performance of children whose parents are more involved in the program may actually be the result of the higher educational levels of their mothers and not the result of parent involvement. The analysis was designed to determine whether the performance of children whose mothers have the same level of education varies with differences in the amount of parent involvement.

Similar questions could be raised about effects of a number of other factors. Therefore, the analysis was designed to control for differences in children's ages, family income, and children's performance on a pretest administered near the beginning of the PreK program. Thus, any effect of parent involvement which is found can be confidently attributed to factors other than mother's education, children's ages, family income, and pretest performance.

Effects on General Reasoning

General reasoning was measured by the Walker Readiness Test for Disadvantaged Children which was administered near the end of prekindergarten.

The analysis showed that family income was not related to the Walker. Therefore, it could be disregarded as having no effect on the test results. The child's age, pretest score, and mother's education, however, did relate to the Walker. For that reason, they were included in the analysis so that their influence could be held constant in assessing the effect of parent involvement.

Parent involvement was found to have a highly significant effect on children's general reasoning, as measured by the Walker. The more time parents were involved, the higher the children's scores on the Walker.

Figure 1 shows the effects of five levels of parent involvement on the Walker scores of children who were average in age, pretest score, family income, and the amount of education their mothers had. It can be seen that a percentile score of 44 was typically obtained by children whose parents did not participate at all. That is, a typical child in this group exceeded 44 percent of the PreK children on the Walker when it was administered at the end of the year. This can be contrasted with scores of children whose parents did participate. Children whose parents participated for 50 hours during the year scored at the 47 percentile.

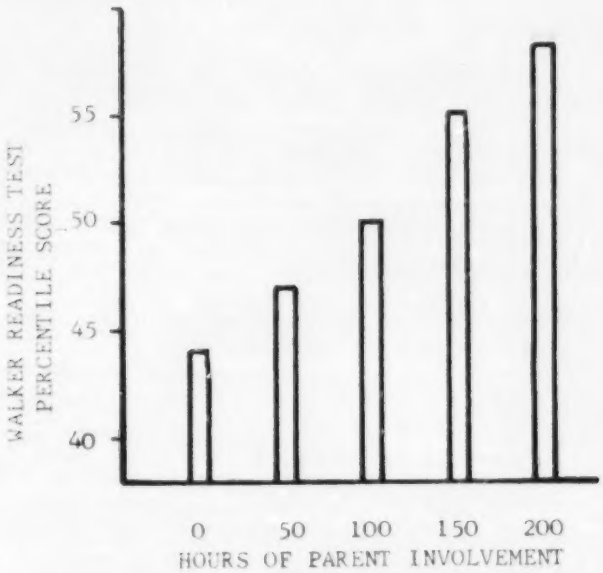

Figure 1. Percentile Scores on the Walker Readiness Test for Children at Different Levels of Parent Involvement

The percentile scores for children whose parents participated for 100, 150, and 200 hours were 50, 55, and 58, respectively. Thus, a child whose parents were involved for 100 hours scored, on the average, 6 percentile points higher on the Walker than a child whose parents had zero hours of involvement. Likewise, a child whose parents were involved for 200 hours scored, on the average, 8 percentile points higher than a child whose parents were involved for 100 hours. This is strong evidence that a child whose parents are involved in the PreK program is likely to be in a favorable position in general reasoning when compared to similar children whose parents were not involved or were involved for fewer hours.

In summary, parent involvement has a favorable effect on children's general reasoning. Moreover, the effect occurs regardless of the PreK child's age, family income, mother's education, and his or her performance at the beginning of the year.

Effect on School-Related Knowledge and Skills

School-related knowledge and skills were measured by the Cooperative Preschool Inventory.

Results of the analysis were similar to those obtained in studying general reasoning. Family income and child's age were found not to relate to the Cooperative. Pretest score and mother's education did relate to the Cooperative and, therefore, were controlled for in studying the effect of parent involvement.

The results show that parent involvement had a highly significant effect on children's school-related knowledge and skills, as measured by the Cooperative.

Figure 2 shows the effects of five levels of parent involvement on the Cooperative scores of children who were average in age, pretest score, family income, and mother's education. A percentile score of 39 was obtained by children whose parents did not participate. The percentile scores for children whose parents participated 50, 100, 150, and 200 hours were 42, 46, 50, and 55 respectively. Here, again, parent involvement had the effect of placing a child in a favorable position among other PreK children whose parents were involved for fewer hours.

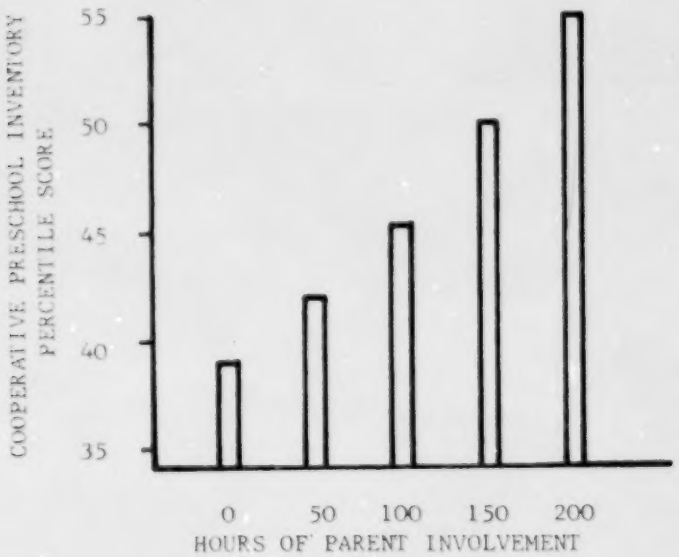

Figure 2. Percentile Scores on the Cooperative Preschool Inventory for Children at Different Levels of Parent Involvement

In summary, parent involvement has a favorable effect on children's school-related knowledge and skill. The effect occurs whatever the child's age, family income, mother's education, and initial PreK performance.

Effects on Knowledge of Verbal Concepts

Knowledge of verbal concepts was measured by the Peabody Picture Vocabulary Test.

Results of the analysis show that parent involvement had a highly significant effect on children's knowledge of verbal concepts, as measured by the Peabody. Unlike the results on the Walker and the Cooperative, however, the effect of parent involvement on children's performance on the Peabody was different for children with different initial scores. The effect was greatest for children who scored lowest on the Peabody when it was administered near the beginning of PreK.

Figure 3 shows the effects of five levels of parent involvement on the Peabody scores of three groups of children--those with low, those with medium, and those with high pretest scores. For children who scored low on the pretest, a percentile score of 21 was typically obtained by children whose parents did not participate in the program. The percentile scores for children whose parents participated 50, 100, 150, and 200 hours were 25, 29, 32, and 38, respectively. For children who scored in the middle ranges on the pretest, their percentile scores for the five levels of parent involvement were 46, 50, 54, 58, and 64. For children who scored high on the pretest, the equivalent percentile scores were 68, 70, 73, 76, and 78.

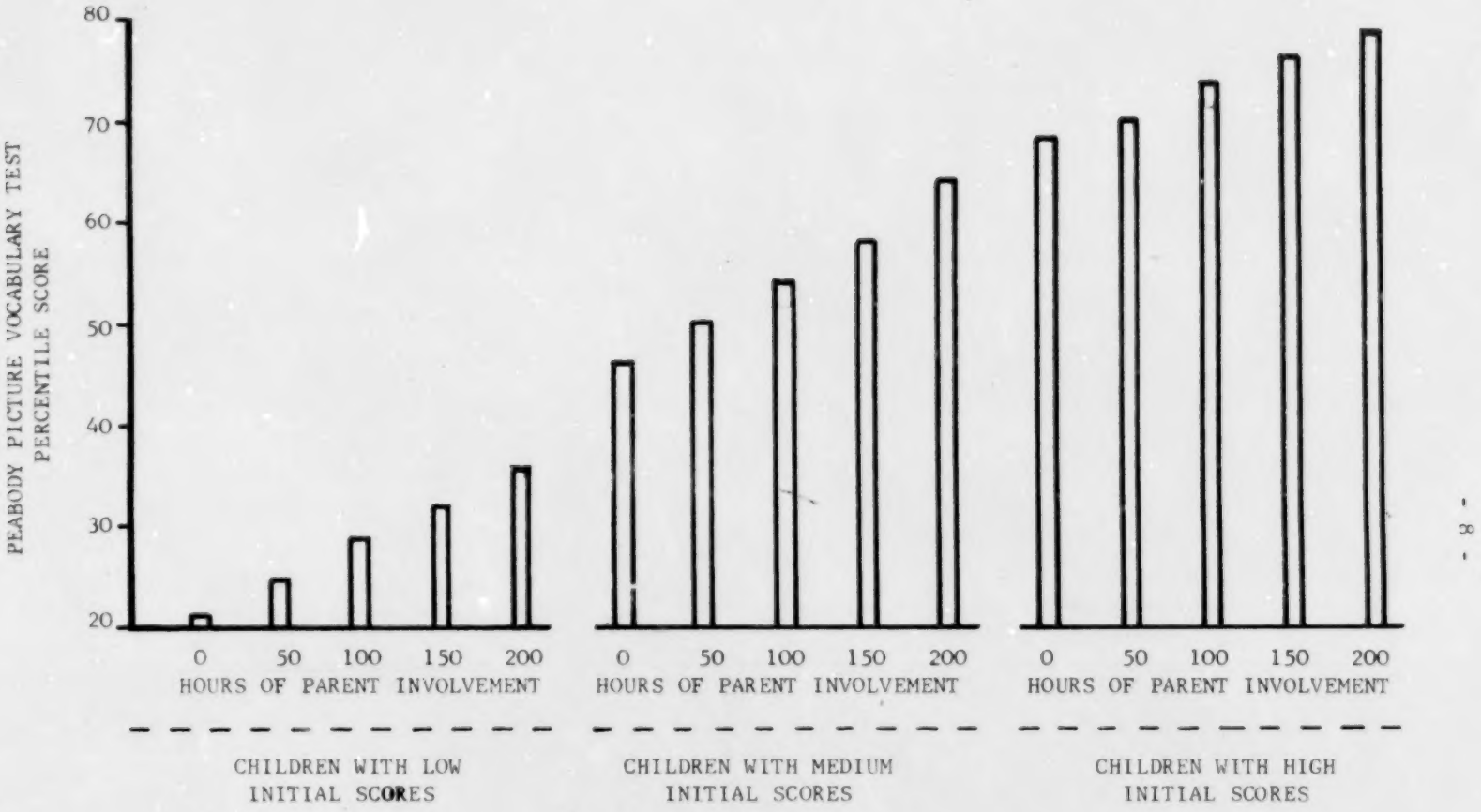

Figure 3. Percentile Scores on the Peabody Picture Vocabulary Test for Children at Different Levels of Parent Involvement and Different Initial Scores

In summary, parent involvement has a favorable effect on children's knowledge of verbal concepts. The effect occurs regardless of the child's age, mother's education, and family income. However, the effect of parent involvement is greatest for children who are initially lowest in knowledge of verbal concepts.

Conclusions

Finding a highly significant effect of parent involvement on three different dimensions of cognitive development is a striking result. It is persuasive evidence of the broad impact parents can have on their children's learning. In addition, parent involvement appears to affect general reasoning and school-related knowledge and skills regardless of the child's age, mother's education, family income, or level of performance at the beginning of PreK. This is additional evidence of a multidimensional effect. In the case of knowledge of verbal concepts, the effect is somewhat more limited, being strongest for children who scored lowest on the measure of verbal concepts at the beginning of PreK.

Some limitations should be noted. The ranges of mother's education and family income are narrower than would be found in the general population because the PreK pupils are selected on the basis of several socioeconomic and educational indicators of disadvantagement. The age range, of course, is that normally found in a program designed for children the year before they enter kindergarten. The scores on the tests at the beginning of PreK may also be expected to be somewhat

lower than those found in the general population. Because of these restrictions on the sample included in this study, generalizations of the effect of parent involvement can be made with greater certainty about a disadvantaged population than about the general population. More concrete information on the general population would require additional research on a less restricted sample.

A second limitation has to do with the measures used. The three tests measure three dimensions of cognitive development, as has been pointed out here. However, the cognitive domain represents only a portion of the spectrum of human functioning which the PreK program is designed to affect. Other phases of the PreK evaluation are investigating effects of the PreK program on some of these other aspects of development, such as the social competency of children and the extent to which children persevere in their learning activities.

A third limitation is based on the fact that parent involvement is largely voluntary. One possible effect of this, which the present study attempts to remedy through the use of control variables, is that the underlying causes of the parent involvement effect may be unclear. A second possible problem centers around the use of the knowledge of the effects of parent involvement. Efforts to increase parent involvement in order to improve children's learning may change the character of parent involvement (making it less voluntary, for example) with the result that the effects change. Whether this occurs could be studied in a more highly controlled experiment but was not studied in the analysis described here.

In conclusion, the impact of parent involvement may have a very practical meaning for many New York State school districts in a time of financial stress. Parent involvement appears to be a relatively inexpensive program component for districts to implement. Encouraging parents to participate in their children's education may be one highly cost-effective technique for improving children's educational performance.

REFERENCES

Donachy, W. "Parent Participation in Pre-School Education." British Journal of Educational Psychology, 1976, 46, 31-39.

Dunn, L.M. Peabody Picture Vocabulary Test: Manual. Circle Pines, Minnesota: American Guidiance Service, Inc., 1965.

Educational Testing Service. Preschool Inventory, Revised Edition, 1970: Handbook. Princeton, New Jersey: Educational Testing Service, 1970.

Hick, Thomas L., David J. Irvine, Mary D. Horan, and David L. Flint. Effects of Parent Involvement in a Prekindergarten Program on Children's Cognitive Performance. Technical Paper #9. Albany, New York: Prekindergarten Evaluation Unit, State Education Department. August 1979.

Hubbell, Virginia Ruth. "Differential Effects of Early Childhood Intervention Programs," a paper presented at the annual meeting of the American Orthopsychiatric Association, April 16, 1977.

Radin, Norma. "Three Degrees of Maternal Involvement in a Preschool Program: Impact on Mothers and Children." Child Development, 1972, 43, 1355-1364.

State Education Department. "The Experimental Prekindergarten Program: Guidelines for School Districts in Preparing an Application to the Commissioner of Education for State Aid to Conduct Experimental Prekindergarten Programs." Albany, New York: Bureau of Child Development and Parent Education, State Education Department, undated.

Walker, W. "Development of a Readiness Test for Disadvantaged Preschool Children in the United States. Final Report." Northwest Missouri State College, Maryville, Missouri, 1969.